

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY USSR (Azerbaijani SSR) REPORT [REDACTED]

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

Attachment 1: A seven-page report on industrial installations in Sumgait [N 40-33, E 49-37], which includes information on a pipe mill, an aluminum plant, a structural steel plant, a chemical plant, and other installations.

Attachment 2: A nine-page report on oil prospecting in the Azerbaijan SSR, which includes information on the areas in which deep exploratory drilling was conducted and the results obtained.

Attachment 3: A five-page report on the shortage of water in Baku and the Baku water supply installations.

Attachment 5: A seven-page report describing the oil fields on Artem Island.

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(Note: Washington distribution indicated by "X"; Field distribution by "#".)

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Attachment 6: A nine-page report on geological prospecting for oil in Azerbaydzhan SSR.

Attachment 7: A one-page report on the decrease in the level of the Caspian Sea.

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INDUSTRIAL INSTALLATIONS IN SUMGAI, AZERBAIJAN SSR

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1. [redacted] truboprokatnyy

zavod, usually referred to as BTZ. [redacted] this abbreviation stands for Batinskiy Truboprokatnyy Zavod. This place was located approximately four kilometers southwest of Sumgait and some six kilometers (as the crow flies) from the sea shore. The director of the plant was Engineer (fnu) MAMEDOV and his deputy was (fnu) AMIRASLANOV. The plant consisted of the following shops [redacted]

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a. Foundry (liteyny tsekh). For production of steel and cast iron. It was equipped with two electric melting stoves, one for steel and the other for the cast iron. Approximately 350 workers on one shift in this shop.

b. Blooming Shop (blyuming). Approximately 150 workers on one shift.

c. A shop referred to as "Martin" which was actually a smelting shop. Approximately 200 workers on a shift. There were four Martin furnaces with stacks 75 meters high.

d. Rolling Mill (prokatny tsekh). For the manufacture of iron and steel pipes of diameters $\frac{1}{2}$ inch, $\frac{3}{4}$ inch, and $\frac{7}{8}$ inch, and larger. Some of these pipes were manufactured for the oil industry. Approximately 350 workers on one shift.

With the exception of the blooming shop which was completed at the end of 1956,

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[redacted]

the BTZ started operation in 1952. Until 1949, a large number of German PW's from a PW camp referred to as Pervyy Poselok worked on the construction of this plant. When the blooming shop was completed in 1956, the BTZ has approximately 9000 workers.

2. From 1949 on, simultaneously with the work on BTZ, the Stal'konstruktsiya was engaged on the construction of the aluminum plant. [redacted]

[redacted] The aluminum plant (abbreviation SAZ which allegedly stands for Sungait Alyuminievyy Zavod) was located approximately one kilometer northeast of BTZ and about 5 kilometers from the Caspian shore. The plant was completed and started operation in January 1956 manufacturing aluminum blocks (kirpichi) of approximately 30 x 10 x 5 centimeters. These blocks were of two types: pervyy and ftoroy sort. The first were allegedly made of a refined aluminum and had a clean, shiny appearance; the second were of rough aluminum, much rougher in appearance, and dull in color. Approximately 3000 workers were employed at the aluminum plant. [redacted] there were three shops in this plant:

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a. A shop [redacted] where aluminum coming in by rail was processed. When the processed ore came out of the shop, it had the appearance of ground clinkers in the form of sand of a light yellow color.

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b. Melting Shop (plavil'nyy tsekh). This shop was equipped with 24 electric melting stoves 4 x 3 x 2 meters in size. There was one concrete stack 110 meters high. There were also two ^{bridge} ~~brick~~ cranes, one 15-ton and the other of 10-ton capacity. Processed ore from the first shop came to the melting shop in electrically driven vans.

c. Molding Shop (formovochnyy tsekh). The melted aluminum from the melting shop was taken here in cylindrical containers of one meter in diameter

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[redacted]

and 1½ meters high, brought here by electrically driven vans. Two conveyor type forming machines made aluminum bricks in this shop. There was a laboratory attached to this shop where incoming melting ore was analyzed and other examinations made. There was supposed to be one more shop in this plant, the construction of which started in 1949 but was discontinued when half-finished in 1955. [redacted]

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[redacted] this shop was later transferred and finished somewhere in the vicinity of Tbilisi, allegedly about 7 kilometers from the city. Quite often the town of Rustavi was mentioned [redacted] as the location of this shop. [redacted]

workers [redacted] were sent to Tbilisi in 1957, allegedly to work on the assembly of this shop.

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3. A plant always referred to by the abbreviation "SMK," which may stand for Sumgait Mostovaya Konstruktsiya or Montazhnaya Konstruktsiya, was located some 6 kilometers due south of Sumgait. [redacted]

[redacted] The plant director was (fnu) SIMA [redacted]. The chief engineer was Ivan Vasil'yevich (lnu). At that time no buildings had yet been erected and the plant operated in the open. In rainy weather and on cold days, no work was done and the machinery was covered by tarpaulins. [redacted]

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there were two bridge cranes of 3-ton capacity and quite a number of electrically operated punching, pressing, and drilling machines, cutters and hammers. [redacted]

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[redacted] various parts for steel bridges and other items such as steel doors, window frames, gas and oil cylindrical tanks of 5, 25, and 50 cubic meter capacity were manufactured in this plant. [redacted]

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4. The 142nd chemical plant (khim zavod). This plant was located some 6 kilometers southeast of Sumgait. It was allegedly an old plant already in operation in

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1946. [redacted] one product of this plant was a green liquid acid which would be used for cleaning metals prior to soldering. Approximately 50 to 60 18-ton capacity railroad freight tanks left this plant daily. In 1955 one of these tanks exploded--it was rumored that some air had gotten into it. [redacted]

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[redacted] the chief engineer was (fnu),

ZAMANOV. [redacted]

[redacted] This plant was always referred to as classified (zasekrechennaya) and a worker knew only what was done in his own shop and nothing about the other shops in the plant. [redacted]

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5. A plant referred to as "SK" (Spirt Kombinat ?) which produced alcohol from oil gasses brought to the plant by pipe line from Baku, Kishly, and allegedly Karadag. This plant was located on the Caspian shore some 6 or 8 kilometers from Sumgait. [redacted] it had one

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110 to 120-meter high concrete stack.

6. A thermal electric power plant referred to as Tokzavod, located on the Caspian one kilometer north of SK. This plant used Caspian sea water and operated on fuel oil (mazut), consuming 18 to 20 freight car loads of fuel oil every 24 hours. It had 6 metal stacks 50 meters high and one concrete stack 110 meters high. This plant allegedly supplied current to all plants in and around Sumgait, Nasosnyy, and at least partially to Baku. It was guarded by MVD guards. [redacted]

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7. An unidentified installation in the open approximately one kilometer west of SK. In 1950 or 1951, 12 ball-shaped tanks approximately 9 meters in diameter

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made out of 16-millimeter steel plates, arrived in dismantled form at this spot from Czechoslovakia. Twelve reinforced concrete blocks 4 x 4 x 0.8 meters were later prepared for these tanks to be placed on. Steel plates 4 x 4 x 0.1 meters were put on top of the reinforced concrete blocks. Later, in 1956 or the beginning of 1957, three of these tanks were assembled, their components electrically welded, and placed on the concrete blocks. The tank bottoms were welded to the steel plates on the concrete blocks. All this was done by an engineer and several welders who came from Moscow for this specific purpose. After the assembling was completed, the tanks were provided, by means of acetylene torches, with square openings approximately 0.8 x 0.8. The exact purpose of the tanks was either unknown to Stal'konstruktsiya engineers or they were forbidden to reveal it.

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Approximately in January 1957, a wooden box 0.4 x 0.4 x 0.2 meters, completely covered with impregnated canvass, arrived from Moscow.

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However, there were many rumors among Stal'konstruktsiya employees that this box contained the testing device and materials mentioned above. The term "two-phased" (dvukhfaznyy) material aggregate component or something similar was often mentioned in this connection.

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Whenever they handled this box, which originally arrived inside a second wooden box

workers

had to put on special impregnated suits, shoes, gloves, and wear gas masks which came for that purpose from the 142nd chemical plant. Since no testing expert was available at Stal'konstruktsiya, it asked for a volunteer who, according to instructions received from some unknown organization in Moscow, would have to be sent to Moscow for three months' training. The test work was always referred to by workers as "extremely dangerous," therefore, it was difficult to find a volunteer in spite of the fact that a large monetary bonus was connected with this task. Finally, an employee by the name of Petro (Inu) volunteered and went to Moscow. He was supposed to be back in October 1957, when the test was to take place. In the meantime, the testing box was placed in a hole one meter deep in the ground in the vicinity of SMK. Several signs reading: "DANGER ZONE - KEEP OUT" were placed around this spot. According to further rumors, when time for the test came, the testing box would be taken out of its present place and put in one of the tanks. The device in the box would then be connected by a transformer and switch to a 380 volt, three-phase, alternating current, line located about one kilometer from the tank. By being connected to the power line, the device in the box would bring about an explosion of the contents of the box. If the tank resisted the explosion, it would be accepted by the Stak'konstruktsiya commission. However, there was considerable doubt that the tank would resist the explosion, in which case the extremely strong light from the explosion could harm the eyesight of those in the vicinity of the tank.

since the tanks were placed in the immediate vicinity of SK, they were eventually supposed to be incorporated into that plant,

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[redacted] why nothing was done with these tanks for some five or six years as they were stored from 1950 to 1957 in dismantled form, [redacted] no instructions for the assembly and testing were received from Moscow until late 1956 or early 1957.

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8. A project for the construction of an automotive vehicle plant (avtomobil'nyy zavod). Sometime in 1956, blue prints for the construction of an automotive vehicle plant on a site approximately two kilometers east of the aluminum plant were received by the Stal'konstruktsiya administration. Among other types of vehicles, the plant was supposed to manufacture dump trucks.

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The excava-

tion on the proposed site started in July 1957. No further information available.

9. Quite often during the past few years some of the Sumgait industrial installations have been shown to various satellite delegations coming to the Soviet Union. In 1955 and 1956 a Czech and a Romanian delegation were taken to the Sumgait aluminum plant and BTZ.

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DEEP OIL PROSPECTING IN THE AZERBAIJAN SSR

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I. Mir-Bashir prospecting area.

1. At the end of 1948, the Kirovabad Neft'razvedka Trust of the organization Ob'yedineniye Azneft' in Baku (later renamed Ministry of Oil Industry, Azer SSR) launched deep prospecting in the Mir-Bashir rayon in the immediate vicinity of Terter (4020 N - 4655 E). For this purpose, a deep prospecting unit called kontora bureniya duzlag was transferred from Duzlag, Yevlakh Rayon, to Terter. Director of this kontora was oil engineer Aga Salim MAMEDOV. Chief engineer was Abdullah IDRIZOV, and the chief geologist Ayub ALIYEV.

2. Kontora duzlag had nine stands (stanki), each of which was composed of two pumps of type U-8-3 (manufactured by some unidentified Ural plant) with a capacity of 24 liters/sec., and hose diameter 6 3/4 inch pressure up to 120 - 130 atmospheres. Two tank diesel motors, 12 cylinders, 30 horsepower, type V2-300; one windlass (levedka) Uralmash, 130 ton capacity, and two 12-cylinder, 30 horsepower, type V2-300 diesel motors for windlass and drilling; one decellerator (reduktor) Uralmash; one fly wheel rotor with an inside diameter of 24 inches, and a tower construction 41 meters high. Each stand had a drilling crew referred to as burovaya brigada composed of 24 men as follows:

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drilling foreman	1
machinist	1
mechanic (slesar')	1
drillers (buril'shchik)	4
assistant drillers	4
top tower workers (verkhovoy)	4
surface workers (rabochiy)	4
motor operators (motorist)	4
lubricator (maslenshchik)	1

The work was done in three 8-hour shifts. In specialty groups having four men assigned (such as 4 drillers) the extra man was used as a replacement in case of accident, sickness, or leave.

3. Deep prospecting in the area of Terter was conducted from the end of 1948 to January 1951.

the kontora drilled 18 wells here, 16 of which produced oil. Only two, No's. 9 and 11, proved to be dry. No's. 5 and 6 were the richest,

the following three wells:

a. Well No. 8. $2\frac{1}{2}$ kilometers north of Terter. Based on results of previous limited depth prospecting conducted in that area, structural charts (strukturnaya karta) were prepared by the responsible limited depth prospecting unit. From the data on these charts and mathematical formulas used for this purpose, the Kirovabad Neft'razvedka set 1800 meters as the prospecting depth of this well. Drilling started in June and by the beginning of October 1950 a 1750 meter depth was reached and oil was found. Detailed organization

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(1) Five meters were dug by hand, and a 7-meter long pipe with an 18-inch inside diameter, referred to as napravlyayushchaya, was lowered into the pit and sealed in place with concrete [REDACTED]

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next

After all the above was completed, the well was handed over to the controlling section (oprobovannaya kontora) of the Kirovabad Neft' Razvedka which, after dropping a torpedo unit (torpedirovat') into the well, started the exploitation. The initial daily output of this gusher was approximately 80 tons.

35 days. The assigned depth was 1500 meters and at exactly that depth oil

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was found. Details of the drilling were similar to those mentioned for well No. 8 except:

(1) The 17 3/4 inch drill was used for 150 meters and a 150-meter long jig with a 14-inch inside diameter was installed.

(2) The next 850 meters was drilled with a 13 3/4 inch drill and a 1000-meter long tekhnicheskaya kolona with a 10-inch inside diameter was installed.

(3) The last 500 meters was drilled with a 9 3/4 inch drill and a 1500-meter long ekspluatatsionnaya kolonna with a 6-inch inside diameter was installed. Initial output of this gusher was 90 tons a day.

c. Well No. 5. Located approximately 700 - 800 meters east of well No. 19. Work started on 7 November 1950 and was completed in 25 days. The assigned depth was 1600 meters. Similar to the procedures described above, partial well depths were 6, 250, 1200, and 1600 meters. A gusher came in at the 1600-meter depth. Initial daily output was approximately 95 tons.

4. [] exploitation of the Mir-Bashir oil fields is still going on. The exploitation is conducted by the Kirovabad Neft'razvedka Trust in Baku, an organization of the Ministry of Oil Industries, Azerbaijan SSR.

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II. Palantukn-Kasseman prospecting area.

1. Deep oil prospecting in this area, which belongs to Safaraliyev Rayon (10 kilometers northeast of Kirovabad) started on 25 January 1951. The Palantukn-Kasseman prospecting unit (kontora razvedka) was entrusted with this task, and was subordinate to the Kirovabad Neft'razvedka. The prospecting area was approximately five kilometers west of Yenikend on the Kura River. Director of the prospecting unit

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was Engineer Agadzhan MUSTAFAYEV, the chief engineer was Yusuf SHIRINOV, and the chief geologist was Romig (lnu).

2. This prospecting unit had three stands organized and equipped similarly to those of Duzlag Kontora (see Part I of this report). Three wells were prepared as follows:

a. Well No. 1. Assigned depth was 1500 meters. However, at 1121 meters hot salt water could not be eliminated and this prevented further drilling. The well was abandoned.

b. Well No. 3. Assigned depth was 3250 meters. Maximum depth achieved was 2800 meters. Further drilling was impossible because of a broken drill. For over 30 days unsuccessful efforts were made to extract the broken drill, and finally the well was abandoned.

c. Well No. 4.

oil was not found and

the well was

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abandoned.

3. Work was completed and the area at least temporarily abandoned in September 1951. Sporadic efforts were made in 1952 and 1953 on well No. 4 without any productive results.

III. Barda (4024 N - 4710 E) prospecting area.

1. Deep oil prospecting in this area started in October 1951. The prospecting unit (kontora bureniya shirvanli) of Kirovabad Neft'razvedka was in charge of the prospecting. The kontora was stationed in Barda. The chief was Engineer Alagber ASKEROV, chief engineer was Petr Zakharovich PROTASOV, and the chief geologist was (fnu) RASULOV.

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2. This prospecting unit had seven stands.

a. Well No. 6. Assigned depth was 1200 meters. The first 900 meters

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for that specific purpose. [] The 25X1
unit chief was Ayub MADZHIDOV; chief engineer, Leon PORTNOY; and the name of
the chief geologist is unknown. [] the deep prospecting in 25X1
this area has not yet been completed. In mid-1957, some 60 to 70 prospecting wells
had been drilled. [] Well No. 2. Work 25X1
on this particular well started in April 1954. The prospecting depth was 2000
meters. The first 450 meters was drilled with a 17 3/4 inch drill, the following
950 with a 13 3/4 inch, and the last 600 by a 9 3/4 inch drill. An oil gusher
came in at 2000 meters. Initial daily output was 200 tons. After seven days this
yield was reduced to 120 tons a day.

VI. Ali-Bayramli prospecting area.

The Ali-Bayramli (3955 N - 4856 E) prospecting area was opened sometime in
1953 and prospecting was conducted by Kontora No. 3, Azmornefttrazvedka, stationed
in Ali-Bayramli. [] The unit chief 25X1
was Engineer Ali Yula MAMEDOV; chief engineer - Nariman SAFAROV; and chief geologist
was Mamed RASULOV. The approximate number of prospecting wells in this area in mid-
1957 was 70. Partial exploitation started here in 1956 by Neftechala Trust, an
organization of Azmornefttrazvedka, and the prospecting is allegedly still going on.
[] Well No. 32, the prospecting depth of which was 1500 meters. 25X1
It was drilled as follows: 250 meters by a 17 3/4 inch drill, 750 meters by a
13 3/4 inch, 500 meters by a 9 3/4 inch. Oil was found at 1500 meters. Initial
daily output was 220 tons, which dropped to 180 tons a day after 14 days.

VII. Divichi prospecting area. Prospecting in the Divichi (4313 N - 4859 E) area
started sometime during World War II and is allegedly still going on. Deep prospect-
ing unit (kontora glubokogo bureniya) No. 4 of Azmornefttrazvedka was in charge of

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work here.

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In 1957 the unit chief was Engineer Balabek ALIKHANOV; chief engineer - Leon Viktorovich ALYANCHIKOV; and chief geologist - Muslim VELIYEV.

There were five oil prospecting zones (razved-ochnyy uchastok) in this area.

1. Yalama (4144 N - 4829 E) zone. Prospecting was allegedly started in 1951 and was still going on

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of five wells in this zone, three of which were unsuccessful (bezuspeshnyye), and two gave natural gas. The latter were No's. 3 and 14, both 3250 meters deep. They are presently being exploited by the oprobovannaya kontora of Azmornefttrazvedka. Gas pressure (bufernoye davleniye) in Well No. 3 at the beginning of 1957 was 60 atmospheres; in Well No. 14 it was 65 to 68 atmospheres.

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2. Khodat (4138 N - 4839 E) zone. Prospecting was allegedly launched in 1951 and completed at the end of 1956. five wells were drilled here and neither oil or gas was found. The area was at least temporarily abandoned after that. Well No. 5. Prospecting depth was 3250 meters. The first 500 meters was drilled with a 17 3/4 inch drill, the next 1500 with a 13 3/4 inch, and the last 1250 by a 9 3/4 inch drill.

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3. Khachmas (4129 N - 4848 E) zone. Prospecting started in 1952. Well No. 1 was drilled to 3250 meters and no productive results obtained. The area has been temporarily abandoned.

4. Amir Khanli (Divichi Rayon) zone. Prospecting was allegedly launched prior to World War II. Approximately 40 wells have been drilled there. Oil was found and the zone released for exploitation to the Siazan'neft Trust of Azmornefttrazvedka.

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(Siazan is a town in the Azerbaijan SSR, approximately ²⁵/kilometers southeast of Divichi.) This is supposed to be a very rich oil area. A pipe line has been constructed up to the Makhachkala-Baku RR line, and a large storage area was built by RR Stations Zorat and Kizilburun (4104 N - 4908 E) from where oil is transferred by rail. [REDACTED] Well No. 32. Prospecting depth was 1500 meters. First 250 meters was drilled with a 17 3/4 inch drill, the next 750 by a 13 3/4 inch, and the last 500 by a 9 3/4 inch drill. Oil was found at 1500 meters. Initial daily yield was 60 tons.

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5. Zagly (4109 N - 4850 E) zone. This is a new prospecting area where prospecting started in 1956. Three wells were drilled: No. 42, 1500 meters deep, where oil was found and the well turned over in May 1957 to the Oprobovannaya Kontora for exploitation. Initial daily yield was 80 tons. No. 65, depth of 2000 meters, started in June 1957, [REDACTED]

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[REDACTED] No. 62, with an assigned depth of 2500 meters, started 25 June 1957, [REDACTED]

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EXTENSION OF THE WATER SUPPLY WORKS IN BAKU

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1. For many years the supply of fresh water in the Baku area has been a very important problem and a sore spot on the national economy of the Azerbaijan SSR. The rapid expansion of this area after World War II sharply increased the consumption of fresh water and necessitated urgent measures for new sources of supply. Certain steps which will be described in this report have been taken to alleviate the existing critical situation. However, even at the present time, the fresh water supply in Baku is insufficient and certain city areas can get water only after 2100 hours and until 0800 hours. Such is the case in the Baiyl area, Verkhniy Nagornyy, Sovetskaya Ulitsa, and others where the water supply pressure is not sufficient to provide water during the day, priority, of course, being given to industrial installations which [] have been allotted sufficient quantities of fresh water for their operations. 25X1

2. The old water supply works for the Baku area, usually referred to as Pervyy Bak (Bakinskiy) Vodoprovod, is located 15 kilometers southwest of Khudat (4138 N - 4839 E). This area is quite often called Shollarskiy Vodoprovod, allegedly from the name of Shollar forest where the works are located. This water works was built prior to 1917, and has been used ever since. Length of the water supply pipes from the works to Baku is 193 or 194 kilometers. The pipes are of reinforced concrete and seven to eight meters beneath the surface.

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3. Meantime, prior to World War II, construction of the second Baku water works, Vtoroy Bak Vodoprovod, was launched in an area four or five kilometers southwest of RR Station Kusarchay (no NIS coordinates available) between Khachmaz (4129 N - 4848 E) and Khudat. [redacted]

[redacted] at the end of 1952, [redacted] there were eight completed water supply zones: 1, 4, 5, 10, 12, 13, 14, and 15 located in the valley of the Kusarchay River. Each of the zones was composed of a large number of wells approximately 100 meters deep that had been drilled by the udarnoye bureniye method.

Zone 5 [redacted] is composed of 85 such wells.

All these zones were already in operation supplying water to the Baku area [redacted]

4. In March 1952, the gaynardzha kontora bureniya, an organization of the apsheronneft' razvedka, was charged with the extension of the second Baku water works. [redacted]

[redacted] the end of 1954, [redacted] the work on the extension of the water works was completed.

5. During the period 1952 to 1954, the gaynardzha kontora bureniya drilled 105 wells, each 400 meters deep, in a line parallel to the old wells mentioned in paragraph 3 and approximately 25 - 30 meters from them. The method employed in this work was similar to that of drilling ~~the~~ oil wells and three cutter drills were used. This work took approximately $1\frac{1}{2}$ years and four drilling stands were employed by the kontora. When the drilling was completed, the water works brigades provided each well with a tank $4\frac{1}{2}$ meters in diameter and 6 meters deep of reinforced concrete and connected each of them individually to the main water supply line. The average water output of these new wells was from 20 to 30 liters/sec. each.

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6. When the series of 105 wells was completed, the gaynardzha kontora bureniya started drilling a new series of wells approximately 4 or $4\frac{1}{2}$ kilometers from the former. The new series was located in Kusarchay forest and prepared in two parallel lines three kilometers from each other.

a. One series of the wells, composed of No's. 1 to 5, each 400 meters deep, was always referred to as gallery (gallereya) A. However, the water pressure in these wells was not sufficient to get it to the surface and a tunnel 14 meters underground had to be built and reinforced pipe $2\frac{1}{2}$ meters in diameter was laid in this tunnel. Each well was then provided with an opening 14 meters below the surface and connected to the above-mentioned conduit. Down at the 14-meter level the pressure was found to be sufficient to drive the water into the conduit and then to the main line to Baku. On the surface, the wells were provided with individual 12-meter deep tanks $4\frac{1}{2}$ meters in diameter and covered with concrete plates, each of which had an opening for ventilation. [redacted] the purpose of these tanks since water never came to their level [redacted] was to prevent cave-ins of the wells. [redacted] Water pressure at the 14-meter deep level was 28 - 30 liters/sec. in each well.

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b. The other series of wells, numbered 4 to 14, were also 400 meters deep. This series was always referred to as gallery B. These wells were connected to a $2\frac{1}{2}$ meter in diameter reinforced concrete pipe line laid some 5 meters below the surface by means of 6-inch pipes called ugol'nik. The water pressure in the ~~pipes 5 meters below the surface~~ wells was 25 to 30 liters/sec. each. [redacted] Gallery B was provided with a reservoir 3x 3 x 6 meters, located between wells No. 9 and No. 10, and a large

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surface pond which collected surface water. This pond was also connected to the conduit. A large number of filters were used to purify the water of the entire system. No details on this available.

7. The second Baku water works was completed at the end of 1954, but also soon proved to be inadequate to satisfy the city's water needs. Therefore, in August 1956, kontora bureniya No. 4 of the apsheronneft' razvedka received an assignment to conduct water prospecting for a third Baku water works (tretiy bak vodoprovod) in the area of Alekseyevka (4129 N - 4848 E), Yalama (4144 N - 4829 E), Ash-Leger (4129 N - 4827 E), and Shirvanovka (4141 N - 4829 E). By the beginning or 1957,

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the following works had been completed:

- a. Alekseyevka zone. One well, No. 15, 500 meters deep, had been drilled and water found at the 500 meter level. Pressure of water fountain on the surface was 26 liters/sec.
- b. Ask-Leger zone. Prospecting well No. 15 completed in Alekseyevka and drilling of well No. 9 was launched in Ask-Leger. This well was 800 meters deep when a water fountain of 22 liters/sec. was obtained.
- c. Shirvanovka zone. Prospecting well No. 21, 800 meters deep, had been drilled, but no water found.
- d. Yalama zone. Prospecting wells No's 4 and 5, each 800 meters deep, drilled. No information on results

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The assignment given kontora bureniya No. 4 on prospecting work for the third Baku water works envisaged the drilling of 21,000 meters of wells.

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Expenses allowed kontora bureniya No. 4

by apsheronneft' razvedka were as follows: a prospecting well 500 meters deep, 400,000 rubles; 800 meters, 450,000 rubles. In addition to labor materials, fuel and maintenance of equipment, certain amounts were allowed for depreciation of equipment.

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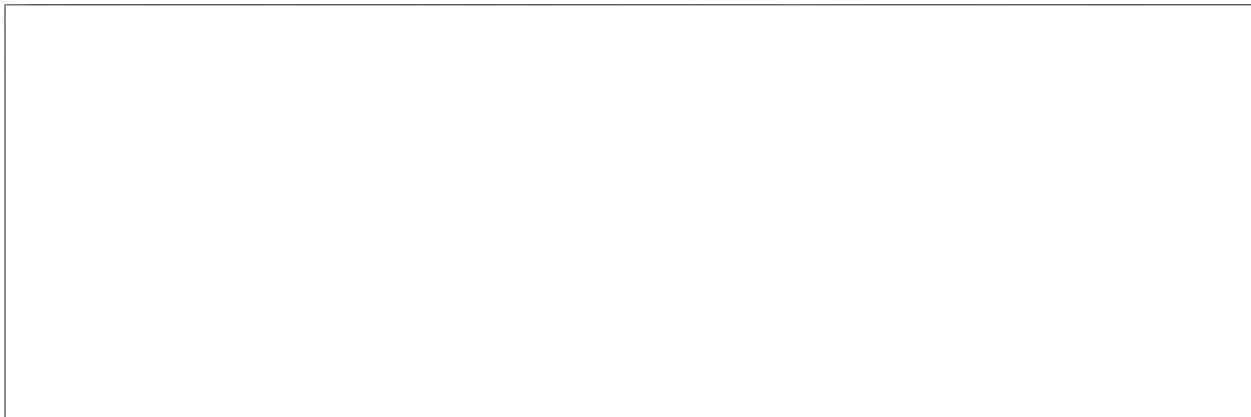
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OIL FIELDS ON THE ISLAND ARTEMA, BAKU

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1. Oil deposits on Island Artema are located in the stratum referred to as *produktionaya tolshcha* [REDACTED]

[REDACTED] which is at

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[REDACTED] the richest oil stratum in the Azer SSR, and the thickness of which, for practical purposes, is always considered as 1500 meters. Horizontally, the *produktionaya tolshcha* is divided into three sublayers: upper, middle, and lower. The actual thickness and composition of the *produktionaya tolshcha* varies considerably throughout the Azer SSR. Wherever all of the components are represented, as is the case in the areas of Surakhany (4025 N - 5001 E), Leninskiy, Stalinskiy, and Kirovshiy Rayony, the *produktionaya tolshcha* has approximately the following composition: [REDACTED]

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a. The upper part which contains oil consists of three formations referred to as *svity*.

(1) Surakhany (from the town of that name) - thickness is 350 meters.

(2) Sabunchi (after the name of that town) - thickness 280 meters.

(3) Balakhany (after town of Balakhany, 4025 N - 4956 E) - 210 meters thick.

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b. The middle part, referred to as pervyy pereryv, is approximately 100 meters thick and contains no oil.

c. The lower part contains oil and consists of five formations:

- (1) Nadkirmakinskaya glina (NKG) - 100 meters thick.
- (2) Nadkirmakinskiy peschanik (NKP) - 150 meters thick.
- (3) Kirmakinskiye svity (KS) - 100 meters thick.
- (4) Podkirmakinskiye svity (PK) - 150 meters thick.
- (5) Kalinskiye svity (KaS) - 60 meters thick and named after the town of Kale (4026 N - 5010 E). This formation is especially often encountered in the Azer SSR.

On the Island Artema, the produktionaya tolshcha consists solely of KS and PK formations.

2. All oil fields on the Island Artema are exploited by the Artem Trust of Azneft, which is a common abbreviation for the Azerbaijan Ministry of Oil Industries. The last few years the Director of the Artem Trust was Engineer Abzar Ibragimovich RUSTAMOV; chief engineer - (fnu) VOROSHILOV; and deputy director - (fnu) EYEATOV. In 1956 and 1957 the following oil fields (promysel were under the Artem Trust: II, III, IV Maritime Marskoy, V Maritime, and VI Maritime. All promysly are broken into several uchastki.

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3. Oil Field II, sometimes referred to as "overland" (sukhaputnyy) is located on the northeastern part of the island. This area originally belonged to oil fields I and II, which were merged after World War II into Field II. There is a large number of derricks, all built on dry land. The basic method of oil extraction is by pneumatic pump (gluboki nasos).

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Oil Field II production

is very low - averages 2 to 4 tons per 24 hours per derrick, and [] the production is constantly decreasing. Quite a number of wells in this area yeild only 0.2 to 0.5 tons daily. Due to the extremely low reserves of oil in this area, the pumps do not work constantly, but for periods of several hours only. The number of wells operating in Oil Field II is 400 - 500. Work on their exploitation is done in three 8-hour shifts. All the wells are old, no new ones have been drilled for some years. It is expected that this area will be completely abandoned or merged with Oil Field III within the next few years. [] a plan for such a merger is in existence and will probably be effected in the near future.

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4. Oil Field III is located in the eastern zone of the central part of the island and to the east of the electric train line. Director of III is (fnu) BAYRAMOV. All wells in this field are on dry land and are quite old. Total number is 200 - 250. Method of oil extraction is similar to that of Oil Field II. Production is somewhat higher, averaging from 5 to 7 tons per well each 24 hours. Exploitation is done by three 8-hour shifts.

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II.

Maritime

5. / Oil Field IV ~~Maritime~~ is located on the northwestern part of the island along and to the south of a 10 to 15 kilometer long scaffold bridge referred to as svernaya estakada. Work at this and other maritime fields on the island is done during two 12-hour shifts, mainly because of difficulties connected with the transportation of crews and the time needed for this purpose. Director of IV is Abdul Ramazanovich FATALIYEV; chief engineer - Abdul ALIBEGOV; chief geologist - (fnu) GAKHRAMANOV. [] these oil fields are quite

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old and [] their exploitation started sometime prior to World War II. There is allegedly a project to drill more wells in 1958 at this field to the north of the scaffold bridge. Field IV is divided into four uchastki, referred to as first, second, third, and fourth. []

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[] The total number of wells in this field was 300 - 320, of which all are under water. The fourth uchastok had approximately 80 wells in operation and some prostayivayushchiye wells, the exploitation of which had been temporarily discontinued because of technical or geological reasons. The most common technical reasons for a temporary discontinuance of exploitation are the breakage of kollona, a shift from the compressor method of exploitation to pneumatic pump, and the delays caused by this shift. The common geological reasons are a flooded layer and the need to transfer extraction to the layer above the flooded area. The method of oil extraction at IV is the same as at II and III, i.e, pneumatic pump. Production is very low and [] when the entire fourth uchastok yielded 706 to 710 tons per 24 hours, the production plan was overfulfilled. The above-mentioned tonnage represents the brutto yield, including zagryaznennost, which, in the summer months, amounted to 12% normally, and in winter from 16 to 18% of the brutto yield. []

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[] several years before, the percentage of zagryaznennost had been much lower - 6 to 8 % in summer and 10 to 12% in winter - but has been constantly increasing. Except for one well, No. 624 or 625, which yielded 15 to 18 tons daily and was always referred to as vysokodebitnaya skvazhina, all the wells were classified as sredne or nizkodebitnyye. Of 80 operating wells in the fourth uchastok, one yielded 10 to 12 tons, another 8 tons, and the remaining 78 averaged 2.4 tons per day. Field IV has three kinds of

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wells: those built on kust, others on otdel'noye ostnovaniye, and the third type on the scaffold bridge. A kust normally has up to 15 wells. An otdel'noye ostnovaniye may have one to four, and those on the scaffold bridge are always single. The majority of the wells in the first uchastok were built on the scaffold bridge, five or six on otdel'noye ostnovaniye, and there was one kust referred to as third. In the second uchastok, all the wells were on the otdel'noye ostnovaniye. In the third, the majority were on kust-s No's. 1 and 2, some were on the otdel'noye ostnovaniye, and several on the scaffold bridge. All wells in the fourth uchastok were on the scaffold bridge.

6. Maritime Oil Field V is located northwest of Field IV, around the scaffold bridge, and mostly to the south of it. Construction of the bridge goes on at the rate of one to two kilometers annually. Director of this field is (fnu) MEL'NIKOV; chief engineer - (fnu) ASKEROV; and chief geologist - Bilal KERIMOV. This is a relatively new field in that it was opened after WW II. It was originally a part of IV and was separated from it several years after the war. Until September 1956, this field was composed of two uchastki. The third was established in September or October 1956. Until September 1956, Field V had approximately 200 wells, but quite a number of new ones were under construction at that time. The new wells are being constructed by the Kontora Bureniya Artemneft, which is equipped with five stands. Drill^{ing}/of one well here takes from three to eight months, mostly because of the extremely difficult work underwater and the many breakdowns. The depth of the Caspian in this area is approximately 20 meters. Production at this field is high and all the wells are classified as vysokodebitnyye. The method of operation is by gusher or compressor. In order to prevent

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[redacted]

exhaustion of deposits, there has never been an attempt to achieve maximum capacity of production. In other words, from a well which might yield 70 tons daily, no more than 40 tons a day is taken. The first uchastok of this field consists of wells built on the scaffold bridge. The second and third have the majority of their wells on kust and some on otdel'nykh osnovaniyakh. Due to the difficulties encountered in construction of foundations far from the scaffold bridge, at the present time none is farther than $1\frac{1}{2}$ or 2 kilometers from the bridge. Transportation of reliefs and supplies to such isolated wells represents quite a problem in rough weather, and it is not at all unusual for crews to be left for several days without relief or food.

7. Oil Field VI is located on the southeast part of the island along the scaffold bridge referred to as yuzhnaya estakada which, [redacted] was approximately 15 - 20 kilometers long. [redacted]

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[redacted] Construction of this field allegedly started prior to WW II. Quite a number of wells were drilled after the war, but drilling was discontinued in 1953 or 1954. Director of this field is an oil engineer [redacted] who arrived on the island in 1956. [redacted]

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The chief engineer is (fnu) TAYIROV. Field VI consists of four uchastki. The majority of wells here are built on a scaffold bridge. There are only 15 or 20 ot del'nykh osnovaniy, and a few kusty. The total number of wells in this field may be 300 or 400. The basic method of extraction is by compressor and only a few wells are operated by pneumatic pump. Practically all the wells in the field are classed as vysoko or srednedebitnyye. The yeild is high averaging 10 to 15 tons daily per well. Field VI is also the best operated and is, therefore, used as a

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show place for various foreign delegations visiting the Baku oil fields.

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8. [] the future of the island lies in its maritime oil fields, the exploitation of which is envisaged to continue for many years. Contrary to this, Fields II and III face inevitable closing in the not too distant future, but even so, compared with other oil fields in the Azer SSR, the fields on Artema are in second or third place by yield.

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Oil Prospecting - Soviet Practices and Organization

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1. Because of the general policy of the Azerbaijan Industrial Institute (AzII) [redacted] students who are foreign citizens, [redacted] never allowed to participate in practical training in geological prospecting. In addition, this policy also applied to all students having anything derogatory in their biographies such as foreign born parents, relatives living abroad, or having been PW's during WW II or inmates of corrective labor camps at any time during the Soviet Regime. These students were never informed that they were considered unreliable, but always knew it because they were barred from taking part in any work sensitive to the national interest, either under some pretext or were simply told that their clearances (dopusk) had not yet come through. Responsibility for these matters, as well as the issue of currency, at AzII was in the spets otel. [redacted]

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2. Throughout the period from 1951 to 1956, the Geological Prospecting Faculty (GRF) of AzII had the following five specialty groups:

- a. Nefte Promyslovaya Geologiya i Razvedka.
- b. Polevaya Geofizika
- c. Promyslovaya
- d. Poleznye Iskopayemye (usually referred to as non-ferrous metal specialty as distinct from oil).
- e. Gidro Geologiya

In 1956 a new specialty called Inzhenernaya Geologiya was introduced at GRF.

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3. There are two basic types of geological reconnaissance units in the USSR oil economy: the geological field unit (geologicheskaya polevaya partiya) and the geological prospecting unit (geologicheskaya razvedochnaya partiya). Quite often both groups are referred to as kontora. The basic characteristics of these two groups are as follows:

- a. Geological Field Unit

(1) The geological field unit in a general

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sense is used for preliminary reconnaissance whenever there is a need to carry out geological prospecting of oil deposits in an unknown area. The work of such units consists of a study of the surface layer, surveying, and preparation of detailed surveys and preliminary geological maps of the area. As a rule, geological prospecting (geologicheskaya razvedka) is not the task of the geological field unit. The main element of study here is the surface layer and its composition. In order to obtain this information, the field unit digs a number of ditches $1\frac{1}{2}$ to 2 meters deep and pits (shurfa) up to 10 meters deep. The latter may be either square or round, depending upon the type of ground. Square ones are normally made in soft layers which are then secured on all sides by wooden boards; the round ones are made in hard layers where securing of walls is not necessary. Field units may be of two types: annual (kruglo-godichnaya) and seasonal (sezonnaya) depending mainly on the size of the area of interest to those making the geological reconnaissance. Annual field units may have better equipment such as theodolites, leveling instruments (nivelir), and plane tables (menzula) for surveying, and hand drills for drilling shafts up to 100 meters deep. The latter task, however, is exceptional, even for annual field units.

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Even when they perform drilling, it practically never goes down to 100 meters but only from 20 to 40. Therefore, the depth of 100 meters, even for exceptional field units, is purely theoretical.

(2) Normal composition of a seasonal field unit is as follows: chief (nachalnik partiya)^{who is an} engineer geologist; senior collector (starchiy kollektor), an engineer geologist who is at the same time the deputy chief responsible for examination and study of the surface layer; one collector, usually a student geologist; and two to four laborers with no special qualifications. A seasonal field unit has rather primitive equipment such as a collapsable metal pole 20 meters long for visual surveying (glazomernaya s'yenka), a magnifying glass for examination of surface layer composition, and an instrument called a survey compass (gornyy Kompas) for determination of stratification elements (elementy zaleganiy): direction, angular to the horizontal, and some other elements, but not the layer thickness. For tools the seasonal units have geological hammers, spades, pick axes, crow bars, and similar equipment.

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(3) The exact composition of an annual field unit has the following personnel: chief, an engineer geologist; prorab, an engineer geologist and deputy chief, and at the same time is chief of the administration and supply section (khozchast'); one or several senior collectors who are geological engineers;

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several collectors who are geological engineers; and the required number of laborers. In addition, the annual field units have topographic groups (sektiya)

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(4) The following organizations in the Azer SSR dispatch the geological reconnaissance field units: Azerbaijan Geologoupravleniye (AGU), Baku, the Geological Institute, and the Azerbaijan Academy of Science in Baku. The type of field unit generally dispatched by AGU is non-ferrous metals reconnaissance--very seldom oil reconnaissance. Quite the opposite is true of the Geological Institute. At no time may a field reconnaissance unit be charged with both tasks: non-ferrous metals and oil reconnaissance. If and when a non-ferrous metals reconnaissance unit runs into oil deposits, it informs the responsible organization, and the same is true when an oil field reconnaissance unit runs into non-ferrous metal deposits.

b. Geological prospecting units.

(1) A geological prospecting unit is always charged with geological prospecting, either in a new area following the completion of geological reconnaissance by a field unit, or in a previously prospected area with the purpose of additional prospecting or expansion in the vertical sense of a productive area already in operation. Depending on these tasks, there are two types of geological prospecting units: limited depth or shallow (melkaya) and deep (glubokaya). The first has technical equipment and facilities for drilling to a depth of 800 meters, the second drills from 800 meters on down.

some deep prospecting units

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[redacted] in the Karadag area [redacted] were conducting deep prospecting to a depth of $3\frac{1}{2}$ kilometers. Geological prospecting units remain in their assigned areas for a long time, sometimes for several years.

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(2) The tasks of a limited depth prospecting unit consist solely of the study of rukovodyashchiy texture of layers (struktura) referred to also as marker (markiruyushchiy gorizont) and the collection of related information on the basis of which a conclusion may be reached as to whether the texture shows content of oil or not. Detailed texture maps have to be prepared. In other words, the task of a limited deep prospecting unit is not to find oil deposits. If and when in its work a limited depth prospecting unit runs into oil and causes a gusher, it closes the well and informs the responsible organization which then dispatches a deep prospecting unit. The latter conducts deep prospecting and initiates exploitation of deposits.

The normal composition of a limited depth prospecting unit is as follows: Chief, an engineer but not necessarily a geological engineer; and a deputy chief who is not necessarily an engineer, and this man is also the savkhoz; a senior geologist who is an engineer geologist; and another engineer geologist whenever necessary, depending on the number of drills operating in the unit; one or several collectors who are technicians or student geologists; an accountant; and the required number of laborers. [redacted]

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[redacted] Whenever there is a need to determine the exact location of a particular well and to show it on a map, a

limited depth prospecting unit may request the despatch of a topographic

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unit to perform the job. Thus, a geological prospecting unit, as distinct from field units, does not have facilities and equipment for topographic work and surveying.

(3) A deep prospecting unit has the task of determining whether there is oil by examining the texture of the soil and to locate it. In other words, the work of a limited depth prospecting unit is of a theoretical-scientific nature (study of texture of soil and drawing theoretical conclusions), and the work of a deep prospecting unit is of a purely practical nature (locating and determining oil deposits). The deep prospecting unit continues the work of the limited depth unit by drilling down to the bottom (podoshva) of the stratum (yarus) assigned by the parent organization, usually the Azmorneft'razvedka. (NOTE: Until approximately 1954, there were two organizations of a similar type in the Azer SSR: Azneft'razvedka and Azmorneft'razvedka, both subordinate to the Ministry of Oil Production, Azer SSR. In 1954 the two organizations were merged into the Azmorneft'razvedka.) Even a deep prospecting unit would not go farther in prospecting than down to the bottom of the assigned stratum and would be responsible solely for the location of oil in that particular stratum. However, since considerable study precedes the work of a deep prospecting unit, and deep drilling is carried on simultaneously in several spots, it is not often that oil is not located. In the latter case, work of the deep prospecting unit is discontinued and the area is either abandoned or a new study made the next year or later, this time going deeper than before.

The composition of a deep prospecting unit is similar to that

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of a limited depth unit and depends mainly on the size of the prospecting area and the depth of the stratum to be prospected.

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(4) [] there is only one organization in the Azer SSR which dispatches limited depth and deep oil prospecting units and that is the Azmorneft'razvedka.

4. The names of strata in the Azer SSR as determined by the Azmorneft'razvedka from the top going downward are as follows:

a. Sovremennyy. A very shallow stratum from several centimeters to several meters thick.

b. Bakinskiy. A shallow layer, normally from a few to no more than 50 meters.

c. Apsheronskiy. Around 120 meters thick.

d. Agdzhadzhil (white clay). A layer 50 to 70 meters thick.

e. Produktivnaya Tolshcha. 1400 to 2000 meters thick. For practical purposes this layer is always considered to be 1500 meters thick.

f. Ispriyalis (the local name is chokrack). Approximately 40 meters thick.

g. Ponticheskiy Yarus. 40 to 60 meters thick.

h. Maykob. A layer up to 100 meters thick.

Only three of the above strata, i.e., c, e, and h, contain oil; the others do not.

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5. [] there are only a few expert geologists in the Azer SSR. They are:

a. Shamil Abdulrakhimovich Azizbekov, Dr. of Geologomineralogicheskikh nauk, and a professor at AzII and the Azer Academy of Science. A very famous petrograph.

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b. Alashraf Alizade. Dr. of Geologomineralog-icheskikh Nauk and a professor at AzII and the Academy of Science.

c. (fnu) Vezirzade. Professor of Mineralogy at AzII.

d. Gambay Askerovich Alizade. Dr. of Geologomineralog-icheskikh Nauk and a very good paleontologist. Professor at AzII and the Geological Institute in Baku.

e. Shafad Mekhdiyev. Professor at the Geological Institute in Baku.

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6. [redacted] information on geological prospecting in the

Azer SSR:

a. Kirovdag is allegedly the name of a mountain in Alibayraminskiy Rayon where prospecting took place in 1953-54 and exploitation of oil fields started in 1955. The exploitation was conducted by the nefchalanef't' trust, which is an organization of the Azer Ministry of Oil Production.

b. Divichi (4313 N - 4859 E) area where deep oil prospecting started in 1955 or 1956 and is allegedly still going on. The prospecting is being conducted by the Azmorneft'razvedka.

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DRAINING OF THE CASPIAN

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the gradual draining of the Caspian from the north.

line on the shore where the water came

to some 40 years ago. During that period of time, the water has moved back some 20 - 25 meters. In the vertical sense, because the shores slope mildly, draining has amounted to approximately one meter.

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